

## ABSTRACT

The invention provides a rotor structure of line-start permanent magnet (LSPM) synchronous motor that includes a shaft; four fan-shaped magnetic poles each having a first eccentric circular arcs of the surface of the magnetic poles which has a center O1 that is offset from the center O of the rotor with an offset length OS1 and which makes the maximum thickness of the air gap roughly two to five times as much as the minimum thickness of the air gap; four permanent magnets disposing in the inner loop of each of the fan-shaped magnetic poles a plurality of pear-shaped conductor slots disposing in equal spaces in the outer loop of the rotor in each of the fan-shaped magnetic poles and orienting in radial direction having O1 as the center for forming a squirrel cage winding; as well as four recesses at the midpoint of the first eccentric circular arcs of the surface of the magnetic poles in each of the fan-shaped magnetic poles.